

Article 5.4. Structural Requirements for Vapor Control Systems at Marine Terminals

(Approved and Filed on 09/10/97; Effective on 10/10/97)

§2550. Purpose, Applicability and Date of Implementation.

- (a) The purpose of the regulations in Title 2, Division 3, Chapter 1, Article 5.4 of the California Code of Regulations is to provide the best achievable protection of the public health and safety and of the environment by using the best achievable technology for the installation, inspection and reassessment of Vapor Control Systems at marine terminals.
- (b) The provisions of Article 5.4 apply to Vapor Control Systems installed at marine terminals.
- (c) When a Vapor Control System or VCS at a marine terminal is connected to a facility VCS that serves tank storage areas and other refinery processes located beyond the boundaries of the marine terminal, the specific requirements of this article apply between the vessel vapor connection and the point where the marine terminal VCS connects to the facility's main VCS.
- (d) Unless otherwise specified in this article, all of the provisions of this article 5.4 become effective thirty days after they have been filed with the Secretary of State.

Authority: Sections 8751, 8755 and 8756, Public Resources Code.

Reference: Sections 8751, 8755, 8756 and 8757, Public Resources Code.

§2551. Review of Engineering Practice, Structural Calculations, Drawings and Petitions.

At least sixty days prior to any installation or modification of a VCS, or to structures supporting a VCS, or to request an alternative to the requirements of this Article 5.4, the terminal operator shall submit any and all plans, calculations, specifications, drawings, analyses, test results and reports required by §§2553, 2554 and 2555, and supporting documentation to justify a request for alternatives under §2556 of this Article 5.4 to the Division to review for conformity with good engineering standards, principles and practice and compliance with this Article 5.4. Unless otherwise specified, all documentation supporting a planned installation or a modification of a VCS or its supporting structures shall be signed by an engineer employed by or appointed by the petitioner.

- (a) The Division shall review all documentation and supporting data submitted by a terminal operator for any installation, modification or alternative for completeness

within thirty working days of receipt. If the supporting data is incomplete, the Division shall require the petitioner to provide any missing information or additional documentation necessary for the Division to complete its evaluation and make a determination. Any plan or request to install or modify a VCS or VCS supporting structures in accordance with the provisions of §§2553, 2554, and 2555, or to be granted an alternative under §2556 of this Article 5.4, shall not be deemed to be complete until the Division notifies the petitioner in writing that the plan or request is complete. After a plan or request is determined to be complete, the Division may request additional information only when necessary to clarify, modify, or supplement previously submitted material.

- (b) The Division shall either approve an installation or modification to a VCS or its supporting structures or disapprove it within thirty working days after the documentation and supporting data have been declared complete. Such approval or disapproval shall be communicated to the petitioner in writing as follows:
 - (1) A letter of approval, issued under any of the provisions of this Article 5.4, shall set forth any findings or conditions, if necessary, upon which the approval is based, and a copy of the approval letter shall be maintained with the terminal's operations manual required by 2 CCR §2385.
 - (2) A letter of disapproval, issued under any of the provisions of this Article 5.4, shall set forth the findings or reasons upon which the disapproval is based.
- (c) If the Division fails to act within the thirty working day period following the date a plan or request is declared complete in accordance with the provisions of subsection (b) of this section, the plan or request shall be deemed to have been approved and the Division shall issue a letter of approval as provided in subsection (b)(1) of this section.
- (d) Any terminal operator may, upon receipt of a letter of disapproval from the Division Chief, appeal the disapproval to the Commission, provided that the appeal is submitted in writing to the Executive Officer of the Commission within fifteen working days after receiving notice of the disapproval.

Authority: Sections 8751, 8755, 8756, 8757 and 8758, Public Resources Code.

Reference: Sections 8751, 8755, 8756, 8757 and 8758, Public Resources Code;
Sections 15375, 15376 and 15378, Government Code.

§2552. Definitions.

Unless the context otherwise requires, the following definitions shall govern the construction of this article:

- (a) "Division" means the staff of the Marine Facilities Division of the California State Lands Commission.
- (b) "Division Chief" means the Chief of the Marine Facilities Division or any employee of the Division authorized by the Chief to act on his behalf.
- (c) The term "Engineer" means a civil, structural or geotechnical engineer licensed by the state of California.
- (d) An "Existing Vapor Control System" or "EVCS" means either of the following:
 - (1) A VCS which was installed at a marine terminal and first operated prior to December 31, 1996; or
 - (2) A VCS which was installed at a marine terminal and first operated as an NVCS after December 31, 1996, but which was subsequently certified in writing by a designated certifying entity and approved for operation by the U. S. Coast Guard. The change in designation from an NVCS to an EVCS shall be effective twenty-four hours after both certification and approval have occurred.
- (e) A "New Vapor Control System" or "NVCS" means a VCS which is not an Existing Vapor Control System or EVCS.
- (f) "Marine Terminal" means a facility, other than a vessel, located on or adjacent to marine waters in California, used for transferring oil to or from tank vessels or barges. The term references all parts of the facility including, but not limited to, structures, equipment and appurtenances thereto used or capable of being used to transfer oil to or from tank vessels or barges. For the purpose of these regulations, a marine terminal includes all piping not integrally connected to a tank facility.
- (g) A "Tank Facility" means any one or combination of above ground storage tanks, including any piping which is integral to the tank, which contains crude oil or its fractions and which is used by a single business entity at a single location or site. A pipe is integrally related to an above ground storage tank if the pipe is connected to the tank and meets any of the following:
 - (1) The pipe is within the dike or containment area;
 - (2) The pipe is connected to the first flange or valve after the piping exits the containment area; or

- (3) The pipe is connected to the first flange or valve on the exterior of the tank, if state or federal law does not require a containment area.
- (h) A "Vapor Control System" or "VCS" means an arrangement of piping and equipment used to control vapor emissions collected from cargo tanks of tank vessels or barges at a marine terminal. For the purpose of these regulations, a VCS includes any and all vapor collection systems, any and all vapor processing and destruction units, any and all vapor recovery units and any and all VCS equipment installed at a marine terminal.
- (i) "VCS Equipment" means any and all components of a VCS, including, but not limited to, critical piping, control systems, and liquid knockout vessels.

Authority: Sections 8751, 8755 and 8756, Public Resources Code.

Reference: Sections 8750, 8751, 8755, 8756 and 8757, Public Resources Code.

§2553. Structures supporting NVCS or New VCS Equipment to be Installed as part of a Marine Terminal but not on the Wharf or Pier.

- (a) This section shall apply only to NVCS or new VCS equipment that is to be Installed within and as part of a marine terminal, but not on a wharf or pier. Unless it will result in a significant increase in loading to supporting structures, this section does not apply to planned or emergency VCS equipment change-outs or one-for-one part replacements.
- (b) At least sixty days prior to installation of an NVCS or new VCS equipment, the terminal operator shall submit to the Division a comprehensive soils report, including, but not limited to, data on all geotechnical properties necessary and appropriate for analysis and design of foundations for the NVCS or new VCS equipment. The geotechnical report submitted for Division review shall be signed by a geotechnical engineer. Upon receipt, the Division shall review all documentation and supporting technical data submitted in response to this section for completeness before approving or disapproving the plan or request, conforming to the procedures and time limits set forth in §2551 of this Article 5.4.
- (c) Any structure or foundation providing support for an NVCS installed at a marine terminal shall, at a minimum, conform to the Uniform Building Code, 1994 Edition, published by the International Conference of Building Officials, 5360 South Workman Mill Road, Whittier, California 90601.
- (d) Supports for VCS components mounted on skids shall, at a minimum, conform with the Uniform Building Code, 1994 Edition, published by the International Conference of Building Officials, 5360 South Workman Mill Road, Whittier, California 90601. The effects of seismic, wind and dead, live and other appropriate loads, using applicable load combinations shall be considered in

designing the individual tie-downs of components to the skid. Steel skirts, supporting structural elements, vessels, controls and detonation arresters shall all be considered for connection and load transfer to the base skid and foundation.

Authority: Sections 8751, 8755 and 8756, Public Resources Code.

Reference: Sections 8751, 8755, 8756 and 8757, Public Resources Code; Sections 15375, 15376 and 15378, Government Code.

§2554. Structures supporting New VCS Equipment to be Installed on Areas of Existing Wharves or Piers Overhanging the Water or Wetlands.

- (a) This section shall apply only to NVCS or new VCS equipment that is to be installed on a wharf or pier at a marine terminal.
- (b) Any portion of a structure providing lateral or vertical support to a skid-mounted, prefabricated VCS component or equipment shall be upgraded to the current structural design and analysis set forth in the following manuals, codes and recommended practice, as appropriate:
 - (1) Uniform Building Code, 1994 Edition, published by the International Conference of Building Officials, 5360 South Workman Mill Road, Whittier, California 90601.
 - (2) Bridge Design Specifications Manual, December 31, 1995 Edition, published by the State of California, Department of Transportation, Publication Distribution Unit, 1900 Royal Oaks Drive, Sacramento, CA 95815-3800.
 - (3) MIL-Handbook 1025/1, "Military Handbook - Piers and Wharves," October 30, 1987, published by the Department of the Navy, Defense Printing Service, Detachment Office, 700 Robbins Avenue, Philadelphia, PA 19111-5094.
 - (4) MARINE TERMINAL AUDIT MANUAL, Second Edition, March 1996, published by the California State Lands Commission, Marine Facilities Division, 330 Golden Shore, Suite 210, Long Beach, CA 90802-4246.
- (c) Under certain conditions, such as near-fault phenomena or deep alluvia, the structural response may significantly amplify the lateral loads at the base of any VCS equipment. When such conditions prevail, the Division may require a more rigorous treatment, such as a dynamic analysis of the structure and VCS equipment using a locally accepted site-specific response spectrum. The

methodology of any such additional analysis shall be determined by an engineer employed by or appointed by the petitioner.

- (d) All analyses and design performed under the provisions of this section shall be submitted to the Division for review. Upon receipt, the Division shall review all documentation and supporting technical data submitted in response to this section for completeness before approving or disapproving the plan or request, conforming to the procedures and time limits set forth in §2551 of this Article 5.4.

Authority: Sections 8751, 8755 and 8756, Public Resources Code.

Reference: Sections 8751, 8755, 8756 and 8757, Public Resources Code; Sections 15375, 15376 and 15378, Government Code.

§2555. Inspection and Reassessment of EVCS Structural Installations.

- (a) This subsection (a) shall apply to all EVCS and EVCS equipment installed on a wharf or pier.
- (1) The Terminal Operator shall carry out or cause to be carried out a thorough inspection of all structural members providing lateral or vertical support to the EVCS and EVCS equipment to determine the structural integrity of the installation. Each inspection shall be carried out in the same manner, utilizing the procedures for performing structural and safety system audits as set forth in the MARINE TERMINAL AUDIT MANUAL, Second Edition, March 1996, published by the California State Lands Commission, Marine Facilities Division, 330 Golden Shore, Suite 210, Long Beach, CA 90802-4246, at the following maximum intervals:

Construction Material	Inspection Interval
Timber	Three Years
Concrete	Six Years
Steel	Six Years

- (2) A report of the inspection of the EVCS structural installation, which documents damage to piles, beams, decks, bumping systems, dolphins and other structural elements, and which contains an evaluation by an engineer employed by or appointed by the petitioner, including a description of remedial measures taken, shall be submitted to the Division for review. If internal damage to piles, beams or deck components is suspected, the inspection shall include non-destructive testing as required by the Division, to establish the component's structural integrity with certainty. Upon receipt, the Division shall review all documentation and supporting technical data submitted in response to this section for

completeness before approving or disapproving the plan or request, conforming to the procedures and time limits set forth in §2551 of this Article 5.4.

- (3) Based on the severity of an inspection report showing structural damage, pest damage, damage caused by impact, corrosion, or any other damage or deterioration that might affect the safety or operation of the VCS, and any damage at the terminal that is reported under the provisions of 2 CCR §2325(e), a more frequent cycle of inspections may be established by the Division.
- (b) This subsection (b) shall apply to all EVCS and EVCS equipment at a marine terminal not installed on a wharf or pier.
 - (1) The Terminal Operator shall carry out or cause to be carried out a thorough inspection of visible structural members providing lateral or vertical support to the EVCS and EVCS equipment to determine the structural integrity of the installation. As a minimum, each major component should be inspected for lateral restraint for seismic loads, and for dead plus live vertical loads being transferred to the structure. The inspection interval shall be a maximum of six years.
 - (2) A report of the inspection of the EVCS structural installation, which documents damage to structural elements, and which contains an evaluation by an engineer employed by or appointed by the petitioner, including a description of remedial measures taken, shall be submitted to the Division for review. Upon receipt, the Division shall review all documentation and supporting technical data submitted in response to this section for completeness before approving or disapproving the plan or request, conforming to the procedures and time limits set forth in §2551 of this Article 5.4.

Authority: Sections 8751, 8755 and 8756, Public Resources Code.

Reference: Sections 8751, 8755, 8756 and 8757, Public Resources Code; Sections 15375, 15376 and 15378, Government Code.

§2556. Alternatives.

- (a) Petitions for Alternatives.
 - (1) Any terminal operator may submit a petition to the Division Chief for alternatives to the requirements of this Article 5.4.

- (2) All petitions for alternatives must be submitted in writing. A petition may be in any form, but it must contain all data and information necessary to evaluate its merits.

(b) Review and Response to Petitions.

Upon receipt, the Division shall review any request for an alternative to the requirements of this Article 5.4 in response to this section for completeness before approving or disapproving the request, conforming to the procedures and time limits set forth in §2551 of this Article 5.4.

(c) Approval of Alternatives.

- (1) The Division Chief may approve any proposed alternatives to the requirements of this Article 5.4, if it can be determined that compliance with the proposed alternatives will ensure an equivalent or greater level of protection of the public health and safety and the environment than that established by this Article 5.4.
- (2) The Division Chief shall either approve or disapprove any petition for alternatives within thirty working days of receipt of a petition that is declared complete. The process for notifying the petitioner of an approval or disapproval and the petitioner's right to appeal a disapproval are set forth in §2551(b), (c) and (d) of this Article 5.4.

(d) Withdrawal of Approval.

- (1) The Division Chief may withdraw the letter of approval of any alternative to the requirements of this Article 5.4, any time the Division verifies that the petitioner has not regularly and consistently complied with the approved alternative requirements.
- (2) Withdrawal of approval of any alternatives to requirements under this Article 5.4, shall be effective immediately upon receipt by the petitioner of written notification of the withdrawal from the Division Chief.

Authority: Sections 8751, 8755 and 8756, Public Resources Code.

Reference: Sections 8751, 8755, 8756 and 8757, Public Resources Code; Sections 15375, 15376 and 15378, Government Code